

**DISPLAY PACKAGE AND SHIPPING SYSTEM****BACKGROUND OF THE INVENTION**

The present invention relates to a display package for  
5 displaying merchandise in a commercial setting, and to a  
system for interconnecting a plurality of packages together  
for making the packages suitable for shipment from  
manufacturer to retailer and equally suited for immediate  
display on pallets and the like in the same configuration.

10 The invention also relates to a system for shipping and  
displaying products that are packaged in display packages  
according to the present invention in a blister pack or  
clamshell package form.

Many products are sold in blister packages or clamshell  
15 packages. In blister packages, the article is placed on a  
piece of cardboard and then covered by a plastic bubble that  
is sized to retain and reveal the item attached to the  
cardboard. Some blister packages use a plastic back rather  
than cardboard. Clamshell packages are similar to blister  
20 packages but instead of having a plastic bubble affixed to a  
cardboard or other backing, clamshell packages have two  
portions that are designed to hold the merchandise,  
literature, etc. within a cavity or cavities therein. The  
clamshell packages can be formed into a single unit with a  
25 hinge, or they can have two separate halves which are attached  
together, such as by heat welding, staples, RF sealing, UV  
sealing, etc. Typically, groups of blister packages and  
clamshell packages are shipped to the point of sale in  
corrugated trays that are in turn placed in larger shipping  
30 containers or on pallets. When received at retail outlets,  
the blister packages or clamshells packages are removed from  
the shipping configuration and displayed for sale in their

trays and pallets or on shelves, counters, tables, racks and hanging brackets.

Many retail stores are now selling articles directly from their shipping containers or pallets. This permits retailers  
5 to reduce their labor costs because they no longer need to remove the products from the shipping container, and then place them on display racks. A preferred practice is to simply cut away a portion of the shipping container, leaving the product to be displayed in the remaining portion of the  
10 shipping container. Preferably, a sufficient part of the shipping container is cut away so that the products can easily be seen by the passing customer.

However, because of their shape and the location of their center of gravity, most blister packages and clamshell  
15 packages have a tendency to fall over when placed in an upright position. Consequently, in order for blister packages to be displayed in a shipping container or on a pallet, it is desirable to provide some form of support structure, to hold the blister packages in an upright display position. A number  
20 of systems have been utilized, most of which require some form of plastic or corrugated tray into which display packages are placed in one or more rows. The tray has slots into which the opposite edges of the blister pack or clamshell pack are fitted. It would be desirable to have display packages and a  
25 system that does not rely on such trays. A display package which is sufficiently stabilized to stand alone on one of its sides is also desirable.

Moreover, while it is desirable that the interconnection between adjacent displayed packages be maintained during  
30 shipping and store display, it is important for a purchaser to be able to easily remove a desired number of display packages from the group of interconnected display packages without

disrupting the group of interconnected display packages remaining at the display location.

#### SUMMARY OF THE INVENTION

5       The present invention provides a display package for merchandising articles which comprises a package having a front portion and a rear portion. The front and rear portions fit together to define a space therein for holding the merchandised articles. In a preferred form, the front portion  
10 has a surface with a plurality of protrusions located thereon and the rear portion has a surface with a plurality of recesses formed thereon, or vice versa. When two or more display packages are placed adjacent to each other, the protrusions on the front portion of one display package will  
15 align with and fit into the recesses on the back portion of an adjacent display package to hold the display packages together. The display packages can also have stabilizing feet formed thereon to further stabilize the display packages to help prevent them from tipping over, either individually or  
20 when grouped together.

In one embodiment of the present invention, there is provided a display package for merchandising an article of commerce comprising:

25       a first portion of the display package having at least one first outside wall with at least one first engagement element, and a first interface region;

30       a second portion of the display package having at least one second outside wall with at least one second engagement element, and a second interface region, the first portion of the display package and the second portion of the display package fitting together along their first and second interface regions to form a space between the first portion and the second portion, wherein the at least one first

engagement element of one display package is adapted to engage with the at least one second engagement element of another display package when a plurality of display packages are placed with the first outside wall of one display package next to the second outside wall of another display package.

In another embodiment, there is provided a display package for merchandising an article of commerce comprising:

a first portion of the display package having a first outside wall with a plurality of first engagement elements attached thereto, a first interface region, and a first perimeter wall joining the first outside wall to the first interface region;

a second portion of the display package having a second outside wall with a plurality of second engagement elements attached thereto, a second interface region, and a second perimeter wall joining the second outside wall to the second interface region; the first portion of the display package and the second portion of the display package fitting together along their first and second interface regions to form a space between the first portion and the second portion, wherein the plurality of first engagement elements of one display package are adapted to engage with the plurality of engagement elements of another display package when a plurality of display packages are placed with the first outside wall of one display package next to the second outside wall of another display package.

In a further embodiment, there is provided a display package for merchandising an article of commerce comprising:

a first portion of the display package having a plurality of uprising portions with first engagement elements on at least some of the uprising portions, and a first interface region;

a second portion of the display package having a plurality of uprising portions with second engagement elements on at least some of the uprising portions, and a second interface region, the first portion of the display package and  
5 the second portion of the display package fitting together along their first and second interface regions to form a cavity between the first portion and the second portion, wherein the plurality of first engagement elements of one display package are adapted to engage with the plurality of  
10 engagement elements of another display package when a plurality of display packages are placed with the first portion of one display package next to the second portion of another display package.

In a yet further embodiment, there is provided a display  
15 package for merchandising an article of commerce comprising:

a first portion of the display package having a plurality of uprising portions with engagement elements attached thereto, and a first interface region;

a second portion of the display package having an  
20 extending cavity portion, and a second interface region, the first portion of the display package and the second portion of the display package fitting together along their first and second interface regions, wherein the plurality of engagement elements of one display package are adapted to engage with the  
25 cavity portion of another display package when a plurality of display packages are placed with the first portion of one display package next to the second portion of another display package.

The configuration of the display package is such that a  
30 plurality of packages can be thus engaged in a self-supporting row. To further augment the system, two or more rows of display packages can be placed side by side, next to each other, and comprise a first layer of display packages which is

then placed on a pallet. Second, third and more layers can be stacked on top of the first layer, separated by a sheet of cardboard or the like. When a pallet wrap covering or other material is placed around the entire assembly, or enclosed by  
5 a corrugated shipping shroud including the pallet, the package is ready for shipment. When received at a commercial or retail outlet, the pallet borne assembly can be placed directly on the floor of the outlet, a warehouse store, etc., and the pallet wrap or corrugated shipping shroud is removed  
10 from the assembly. The display packages are then immediately available and ready for display to customers. Removal of the first pack from the top layer and first row leaves the other packages in the row intact so that the packages can be removed one by one, while the remaining display packages remain in  
15 self supporting nested relationship maintaining the integrity of the display packages and pallet display.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The invention may be more readily understood by referring  
20 to the accompanying drawings, as follows:

FIG. 1 is an isometric view of an exemplary display package according to the present invention.

FIG. 2 is an exploded isometric view of the exemplary display package of FIG. 1 showing the front and rear portions.

25 FIG. 3 is a plan view of the exterior surface of the rear (second) portion of the exemplary display package of FIG. 1.

FIG. 4 is a plan view of the interior side of the front (first) portion of the exemplary display package of FIG. 1.

FIG. 5 is a top plan view of the exemplary display  
30 package of FIG. 1.

FIG. 6 is a side view of the exemplary display package of FIG. 1.

FIG. 7 is a side view of two display packages of FIG. 6 joined together.

Fig. 8 is an isometric view of a plurality of packages on a pallet ready for display.

5        FIG. 9 is an exploded, isometric view of another exemplary embodiment of a display package according to the present invention showing front and rear portions thereof.

FIG. 10 is a side view of the exemplary display package of FIG. 9 showing the front and rear portions joined together.

10       FIG. 11 is a side elevation of two display packages of FIG. 10 joined together.

FIG. 12 is an isometric view of another embodiment of the display package of the invention.

15       FIG. 13 is an exploded isometric view of another exemplary embodiment of a display package according to the present invention showing front and rear portions thereof.

FIG. 14 is an isometric view of a bottom portion of the exemplary embodiment of the display package of FIG. 13 flipped over to show its uprising portions with slots formed therein.

20       FIG. 15 is a top plan view showing the first engagement means on an uprising portion of the bottom portion.

FIG. 16 is a cross sectional view along view lines 16-16 of FIG. 15.

25       FIG. 17 is a front view of the uprising portion of FIG. 15.

FIG. 18 is a top plan view showing the second engagement means on an uprising portion of the top portion.

FIG. 19 is a cross sectional view along view lines 19-19 of FIG. 18.

30       FIG. 20 is a front view of the uprising portion of FIG. 18.

FIG. 21 is a side view showing a display package according to FIG. 13 just before being slid into connection with a front portion of another display package.

FIG. 22 is a side view showing a display package  
5 according to FIG. 13 after being slid together with a front portion of another display package.

#### DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1-7, an exemplary display package 10  
10 of the invention is shown. Display package 10 has a first portion 12 with a first outside wall 14 with a plurality of first engagement elements 16 and 18 formed thereon, a first interface region 20, and a first perimeter wall 21 joining the first outside wall 14 to the first interface region 20. The  
15 first portion has a top side 22 and a bottom side 24. The engagement elements can be integrally formed into the packaging or may be attached to the package by using glue or other fastening means. The first engagement elements 16 and 18 can be different in shape and size (as shown) or can be  
20 identical (not shown.) Also, while only four of each first engagement elements 16 and 18 are shown, a greater or lesser number can be utilized, and placed at different locations anywhere on first outside wall 14. An optional stabilizing foot portion 26 can be formed at bottom side 24, the purpose  
25 of which will be discussed below. While a single stabilizing foot portion 26 is shown, two or more foot portions could be provided. A rim 28 of material can be formed at least partially around first interface region 20 if desired.

Display package 10 has a second portion 30 with a second  
30 outside wall 32 with a plurality of second engagement elements 34 and 36 formed thereon, a second interface region 38, and a second perimeter wall 40 joining second outside wall 32 to second interface region 38. Second portion 30 has a top side



42 and a bottom side 44. Second engagement elements 34 and 36 can be different in shape and size (as shown) or can be identical. Also, while four of each of the second engagement elements 34 and 36 are shown, a greater or lesser number can be utilized, and placed at different locations anywhere on second outside wall 32. Engagement elements 34 and 36 are shown as recesses that extend inwardly below the surface of second outside wall 32. First engagement elements 16 and 18, respectively, are sized and shaped to fit together with second engagement elements 34 and 36, respectively, as will be described further below. Optional stabilizing feet portions 46 can be formed at bottom side 44, the purpose of which will be discussed below. While two stabilizing foot portions 46 are shown, a single or plurality of foot portions can be provided. Stabilizing foot portions 46 can, if desired, be made to extend from the first interface region 38 to beyond the second outside wall 32. In such cases, stabilizing feet portions 26 are preferably sized and shaped not to interfere with stabilizing foot portion 46. A rim 48 of material can be formed at least partially around second interface region 38 if desired. First interface region 20 can comprise a channel and second interface region 38 can comprise a ridge which is sized to fit within channel 20, or vice-versa. Other types of interfaces can be used to hold first portion 12 and second portion 30 together. Articles (not shown) can be retained and displayed within a cavity 50 formed by the connection of first portion and second portion 12 and 30, respectively, and can be securely stored therein by pressure sealing, gluing, heat sealing, stapling, RF sealing, UV sealing, etc. first interface region 20 shut with second interface region 36. The optional rims 28 and 48 can also be used for this purpose and/or the sealing can take place along the interface regions 20 and 36. Although FIGS. 1-7 show a generally box-shaped

cavity 50 formed by the space created by joining first portion 12 and second portion 30, other cavity shapes and sizes could be formed as desired in first outside wall 14 and/or second outside wall 32 that might better conform to the articles' shape and size.

FIG. 6 is a side view of the exemplary display package 10 and shows the first portion 12 and second portion 30 placed together. First engagement elements 16 and 18 are shown extending above first outside wall 14, and second engagement elements 34 and 36, are shown extending inwardly of second outside wall 32. As can be seen, first engagement elements 16 and 18 are aligned with second engagement elements 34 and 36, respectively, such that when, as is shown in FIG. 7, two display packages 10A and 10B are placed adjacent to each other, first engagement elements 16 and 18 of display package 10A will fit into second engagement elements 34 and 36, respectively, of second display package 10B, to hold the two display packages 10A and 10B together. First engagement elements 16 and 18 can preferably have interference fits with second engagement elements 34 and 36, respectively, so that a slight pulling force is required to separate display packages joined in this way. This helps prevent tipping over of individual display packages in a plurality of display packages in a pallet and the like and also helps better display their contents. Optional stabilizing feet portions 26 and 46 further help stabilize the display packages when stood up as shown in FIGS. 6 and 7.

Fig. 8 is an isometric view of a plurality of display packages 10 on a pallet 60 ready for display. This view shows two columns 62A and 62B of display packages forming layers 64A, 64B and 64C on pallet 60. The layers 64A, 64B and 64C can be separated by sheet material 66 (e.g. corrugated cardboard.) Goods shipped on pallets are often wrapped with

plastic film or enclosed by a corrugated shroud for shipment.

With the present invention, the plastic wrapping or shroud (not shown) can be easily removed, which immediately readies the pallet of display packed articles to be displayed and  
5 sold. Because of the engagement feature and the optional stabilizing feet feature, the display packages will remain in their upright position without additional supports such as a corrugated tray.

FIGS. 9-11 show another exemplary embodiment of a display  
10 package 80 according to the present invention, and show a first, front portion 82 and a second, rear portion 84 thereof. First, front portion 82 has a plurality of first uprising portions 86 with first engagement elements 88 formed thereon. First engagement elements 88 can comprise protrusions having a  
15 predetermined size and shape. A first cavity portion 90 is formed in first portion 82 and extends above a back wall 92. First uprising portions 86 also extend above back wall portion 92. Optional stabilizing legs 94 can be formed at a bottom side 96 of front portion 82, opposite a top side 98. First  
20 engagement elements 88 can be formed on top surfaces 100 of first uprising portions 86. First portion 82 has a first interface region 102, which can be formed around a perimeter first portion 82. Second portion 84 has a plurality of second uprising portions 110 with second engagement elements 112  
25 formed thereon. Second engagement elements 112 can comprise recesses having a predetermined size and shape that is complementary to first engagement elements 88. Second engagement elements 112 can be formed on a top surface 114 of second uprising portions 110. A second cavity portion 116 is  
30 formed in second portion 84 and extends below a back wall 118. Second uprising portions 110 also extend above back wall portion 118. Optional stabilizing legs 120 are formed at a bottom side 122 of second, rear portion 84, opposite a top

side 124. Second portion 84 has a second interface region 126, which can be formed around a perimeter of second portion 84. First interface region 102 can comprise a channel and second interface region 126 can comprise a ridge which is  
5 sized to fit within channel 102, or vice-versa.

Other types of interfaces can be used to hold first portion 82 and second portion 84 together, and it is also possible to eliminate interfitting interfaces and instead simply rely on correct alignment of the first and second  
10 portions prior to joining them together. Articles (not shown) can be retained and displayed within the cavity formed by the connection of first portion 82 and second portion 84 and can be securely stored therein by pressure sealing, gluing, heat welding, stapling, etc. first interface region 102 with second  
15 interface region 126 and/or on optional rims 127 and 128 on first and second portions 82 and 84, respectively.

FIG. 11 is a side elevation of two display packages 80A and 80B joined together by placing display packages 80A and 80B with uprising portions 86 of display package 80A abutting  
20 uprising portions 110 of display package 80B, such that first engagement elements 88 are placed within second engagement elements 112. First engagement elements 88 can preferably have interference fits with second engagement elements 112, respectively, so that a slight pulling force is required to  
25 separate display packages joined in this way. This helps prevent tipping over of individual display packages in a plurality of display packages on a pallet and the like and also helps better display their contents. The optional stabilizing feet 94 and 120 will help stabilize individual  
30 display packages and groups of display packages on a supporting surface. As can be seen, spaces 129 are formed between the two display packages 80A and 80B. These spaces 129 serve a useful function in that they provide a convenient

location for a shopper to slide his or her fingers to pull off one or more of the display packages from other display packages. Additionally, the spaces 129 can provide a convenient visual indicator to a store checkout clerk and/or  
5 shopper in determining whether a single unit is being purchased, or a plurality of units are being purchased.

Although the first engagement elements and second engagement elements have been described as protrusions and recesses, respectively, other types of engagement elements can  
10 be used, and their locations on the first and second package portions can be switched.

FIG. 12 is a perspective view of another embodiment of the display package 130 of the invention, wherein a first portion 132 and a second portion 134 are joined together by a  
15 living hinge 126 in a clamshell-like manner. First engagement elements 138 are formed on first portion 132 and second engagement elements 140 are formed on second portion 134. Optional stabilizing feet 142 can be formed on first portion 132 and optional stabilizing feet 144 are formed on second  
20 portion 134.

FIG. 13 is an exploded perspective view of another exemplary embodiment of a display package 150 according to the present invention showing front and rear portions, 152 and 154, respectively and FIG. 14 is a perspective view of rear  
25 portion 154 flipped over to show its uprising portions 162. Display package 150 is similar to the exemplary embodiment of a display package 80 of FIG. 9, except that its first engagement means 156 formed on first uprising portions 158 and extending above a top face 164 thereof, are designed to  
30 slidably engage with second engagement means 160 formed on second uprising portions 162 and extending below a top face 166 thereof. First engagement means 156 can comprise a protrusion, and second engagement means 160 can comprise a

slot, with protrusion 156 being sized and shaped to slideably engage with slot 160 to be retained therein. Other features of display package 150 can be as shown and describe with respect to the exemplary embodiment of FIGS. 9-11, and bear  
 5 the same reference numerals.

FIGS. 15-17 are views of second engagement means 160 formed as a slot formed into top face 166 of second uprising portion 162 of bottom portion (not shown). FIG. 15 is a top plan view showing slot 160 formed into top face 166 of second  
 10 uprising portion 162 of bottom portion 154. FIG. 16 is a cross sectional view along view lines 16-16 of FIG. 15. FIG. 17 is a front view of FIG. 15. Slot 160 preferably has outwardly slanting side walls 170 and optionally a backwardly slanting rear wall 172, and a bottom wall 174. Slot 160 thus  
 15 has a shape which is adapted to capture a complementary protrusion and only allows such a protrusion to enter from its open end 176 and be withdrawn therefrom.

FIGS. 18-20 are views of first engagement means 156 formed as a protrusion formed to extend above top face 164 of  
 20 first uprising portion 158 of top portion 152. FIG. 18 is a top plan view showing protrusion 156 formed to extend above top face 164 of first uprising portion 158 of top portion 152.

As shown in FIG. 19, which is a side view along view lines 19-19 of FIG. 18, and FIG. 20, which is a front view of same,  
 25 protrusion 156 can have inwardly slanting side walls 180 and a flat top surface 182, and an optionally frontwardly slanting rear wall 184. Protrusions 156 thus has a shape which is adapted to be captured in the complementary slot 160 formed on first uprising portions 162 in a sliding action by sliding  
 30 slanting front 184 of protrusion into open end 176 of slot 160 on second uprising portions 162. Although first and second engagement means 156 and 160, respectively, are shown as a slot and protrusions and as having generally rectangular

shapes with slanted walls, which when slid together form a type of "dovetail" joint, other shapes can be used, such as semi-circular, triangular, trapezoidal, etc. slots and protrusions which permit a sliding and locking engagement.

5 Although the top 182 of protrusion 156 can be flat and the bottom 174 of slot can both be flat, it is possible for these surfaces to be curved if desired. Also, other types of sliding engagements can be provided to hold the display packages together, such as tunnels and pins which fit therein  
10 (not shown).

FIG. 21 is a side view showing two display packages 150A and 150B according to FIG. 13 just prior to their being engaged together by sliding protrusions 156 on uprising portions 158 of front portion 152 of display package 150A into  
15 slots 160 on uprising portion 162 of rear portion 154 of display package 150B.

FIG. 22 is a side view showing the two display packages 150A and 150B engaged together, with protrusions 156 on uprising portions 158 of front portion 152 of display package  
20 150A completely slid into slots 160 on uprising portion 162 of rear portion 154 of display package 150B. In this orientation, display packages 150A and 150B will remain engaged together, and display package 150B can be taken off of another single display package 150A (as shown), or a row of  
25 display packages (not shown) by lifting up display package 150B relative to display package 150A. Since a plurality of display packages are held together, they tend to stabilize each other in an upright display position. As with the embodiment of the display packages of FIGS. 10 and 11, the  
30 optional stabilizing feet 94 and 120 of the present embodiment will further assist in stabilizing individual display packages and groups of display packages on a supporting surface. As can be seen, spaces 129 are formed between the two display

packages 150A and 150B. These spaces 129 serve a useful function in that they provide a convenient location for a user to slide his or her fingers to pull off one or more of the display packages from other display packages. Additionally, 5 the spaces 129 can provide a convenient visual indicator to a store checkout clerk and shopper which can help them determine whether a single unit is being purchased, or a plurality of units are being purchased.

While the first and second engagement means have been 10 described as being on first and second portions of the display packages, the placement of the first and second engagement means can be switched if desired.

Although the invention has been shown and presented herein by means of certain embodiments of the display packages 15 and shipping and display systems, it is to be understood that the invention is not limited thereto but may be variously embodied within the spirit and scope of the invention. Those of ordinary skill in the art will be able to identify various modifications which still remain within the ambit of the 20 claims which follow.